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HL59517/000/NJL

Anmeldung Nr./Application No./Demande n°//Patent Nr./Patent No./Brevet n°

97930760.0-1270/JP9702405

Anmelder/Applicant/Demandeur//Patentinhaber/Proprietor/Titulaire

FUJITSU LIMITED

## COMMUNICATION

The European Patent Office herewith transmits the partial European search report under Rule 46(1) EPC relating to the above-mentioned European patent application.

Copies of the documents cited in the search report are enclosed.

The applicant's attention is drawn to the following:

The search Division informs the applicant that if the European search report is also to cover inventions other than the invention first mentioned in the claims, a further search fee must be paid for each of these inventions, within ONE MONTH after notification of this communication.

If the application has been filed up to 30 June 1999, the search fee in force before 01 July 1999 (EUR 869,-) or the equivalent applicable on the date of payment is payable.

**This applies also to the search fees requested under Rule 46(1) EPC.**

See also OJ EPO 06/1999, 405.

☐ The abstract was modified by the Search Division and the definitive text is attached to the present communication.

☐ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

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### Note to users of the automatic debiting procedure:

Unless the EPO receives prior instructions to the contrary, the search fee(s) will be debited on the last day of the period for payment. For further details see the Arrangements for the automatic debiting procedure, Supplement to OJ EPO 02/1999.

REGISTERED LETTER



European Patent  
Office

**SUPPLEMENTARY  
PARTIAL EUROPEAN SEARCH REPORT**

under Rule 46, paragraph 1 of the European Patent Convention EP 97 93 0760

Application Number

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	PATENT ABSTRACTS OF JAPAN vol. 016, no. 130 (E-1184), 2 April 1992 (1992-04-02) & JP 03 293740 A (CASIO COMPUT CO LTD), 25 December 1991 (1991-12-25)	1,2,11, 18	H01L21/56 H01L21/60 H01L23/28 B29C43/18
A	* abstract *	3-10,12, 19-28, 41-43	
X	US 4 172 907 A (KEEFE JAMES E O ET AL) 30 October 1979 (1979-10-30)	1,2,11, 18	
A	* abstract *	3-10,12, 19-28, 41-43	
X	PATENT ABSTRACTS OF JAPAN vol. 095, no. 003, 28 April 1995 (1995-04-28) & JP 06 342794 A (MITSUBISHI ELECTRIC CORP), 13 December 1994 (1994-12-13)	1,2,11, 18	
A	* abstract *	3-10,12, 19-28, 41-43	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H01L
LACK OF UNITY OF INVENTION			
The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:			
see sheet B			
The present partial European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.			
Place of search MUNICH		Date of completion of the search 12 August 1999	Examiner Bekkering, R
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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EPO FORM 1503 03.82 (P4/C23)

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	PATENT ABSTRACTS OF JAPAN vol. 017, no. 257 (E-1368), 20 May 1993 (1993-05-20) & JP 05 003183 A (NEC CORP), 8 January 1993 (1993-01-08)	18,42,43	
A	* abstract *	1-12, 19-28,41	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-12,18-28,41-43

Claims 1-12,18-28,41-43 relate to a method (claims 1-12,20-28) comprising resin sealing a substrate, exposing the protruding electrodes and cutting the resin sealed substrate to separate the semiconductor elements, to a semiconductor element having a resin seal and protruding electrodes (claims 18,19,41-43).

2. Claims: 13-17

Claims 13-17 relate to a mold.

3. Claims: 29,34,35

Claims 29,34,35 relate to a method of first separating the semiconductor elements having protruding electrodes and then resin sealing them.

4. Claims: 30-33,36-40

Claims 30-33,36-40 relate to a method of first resin sealing a substrate with semiconductor elements followed by cutting the substrate in positions where external electrodes are formed and a semiconductor elements having laterally exposed external electrodes.

5. Claims: 44-53

Claims 44-53 relate to a method of resin sealing a wiring board on which a semiconductor element and leads are arranged.

6. Claims: 54-56

Claims 54-56 relate to a method of resin sealing a wiring board having extending portions on which a semiconductor element and leads are arranged.

7. Claims: 57-72

Claims 57-72 relate to a resin sealed electrode plate (claims 57-64) with a single or a plurality of semiconductor elements and external connection electrodes at side surfaces, a fabrication method (claims 65-69) and a mounting arrangement (claims 70-72).



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

8. Claims: 73-78

Claims 73-78 relate to a resin sealed semiconductor element (claims 73-77) attached to an interposer by an anisotropic conductive film and a fabrication method (claim 78).

9. Claims: 79-86

Claims 79-86 relate to a resin sealed semiconductor element (claims 79-85) attached to an interposer by an adhesive film and a fabrication method (claim 86).

The separate groups of inventions are not so linked as to form a single general inventive concept, contrary to the requirements of Article 82 EPC, resin sealing of a semiconductor element having protruding electrodes being already known from the prior art (JP-A-3 293 740).

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 97 93 0760

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-08-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 03293740 A	25-12-1991	JP 2830351 B	02-12-1998
US 4172907 A	30-10-1979	NONE	
JP 06342794 A	13-12-1994	US 5554887 A	10-09-1996
		US 5710062 A	20-01-1998
		US 5834340 A	10-11-1998
JP 05003183 A	08-01-1993	JP 2701589 B	21-01-1998